

ALASKA PENINSULA SALMON CATCH AND ESCAPEMENT
SAMPLING PROCEDURES

1998 OPERATIONAL PLANS

By

Robert L. Murphy

Regional Information Report¹ No. 4K98-23

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
211 Mission Road
Kodiak, Alaska 99615

May 1998

¹The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished division reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data; this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Commercial Fisheries Management and Development Division.

ALASKA PENINSULA SALMON CATCH

SAMPLING PROCEDURES, 1998



By:

Robert L. Murphy

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
211 Mission Road
Kodiak, Alaska 99615

May 1998

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	i
LIST OF FIGURES	i
LIST OF APPENDICES	ii
INTRODUCTION	1
OBJECTIVES	1
SUPERVISION	2
PERSONNEL	2
Dates of Sampling Events	2
METHODS	2
DATA ANALYSIS AND REPORTING	4
LITERATURE CITED	5
TABLES.....	6
FIGURES.....	14
APPENDICES	20

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Districts, sections, and statistical areas for the Alaska Peninsula and Aleutian Islands Management Areas, 1998	6
2. Sockeye salmon catch sampling schedule for the Alaska Peninsula and Aleutian Islands Management Areas, 1998	7
3. Chum salmon catch sampling schedule for the Alaska Peninsula and Aleutian Islands Management Areas, 1998	9
4. Coho salmon catch sampling schedule for the Alaska Peninsula Management Areas, 1998.....	11
5. Chinook salmon catch sampling schedule for the Alaska Peninsula Management Areas, 1998.....	13

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Map of the Alaska Peninsula Management Area, with the North and South Peninsula defined.....	14
2. Map of the Alaska Peninsula Management Area from Kupreanof Point to Scotch Cap with the salmon fishing districts defined.....	15
3. Map of the Alaska Peninsula Area from Kupreanof Point to McGinty Point (Southeastern District) with the statistical salmon fishing areas shown	16
4. Map of the Alaska Peninsula Area from McGinty Point to Arch Point (South Central Districts) with the statistical salmon fishing areas shown.....	17
5. Map of the Alaska Peninsula Area from Arch Point to Unimak Islands (Southwestern District) with the statistical salmon fishing areas shown	18
6. Map of the Alaska Peninsula Area from Hague Rock to Unimak Pass (Unimak District) with the statistical salmon fishing areas shown	19

LIST OF APPENDICES

	<u>Page</u>
APPENDIX A: ALASKA PENINSULA SCALE SAMPLING TECHNIQUE	20
APPENDIX B: COMPLETION OF MARK-SENSE AWL FORMS	22
B.1. Assigned port and weir location codes	29
B.2. Chinook salmon AWL form and gumcard with three scales per fish	30
B.3. Periods and corresponding calendar dates, 1998	31
B.4. Sockeye salmon AWL form and gumcard with one scale per fish	32
B.5. Coho salmon AWL form and gumcard with four scales per fish.....	33
APPENDIX C: CAMP POLICY	34
APPENDIX D: FIRST AID AND SAFETY	38

INTRODUCTION

The Alaska Peninsula and Aleutian Islands Management Areas commercial fishing area encompasses the Aleutian Islands, the North Alaska Peninsula west of Cape Menshikof, and the South Alaska Peninsula west of Kupreanof Point (Figures 1-6). There are 335 known salmon producing streams in the Aleutian Islands Area and 247 salmon producing streams in the Alaska Peninsula Area (Murphy 1992).

Five species of salmon are commercially harvested in the Alaska Peninsula and Aleutian Islands Management Areas: chinook, sockeye, pink, chum, and coho. Economically, sockeye and pink salmon are usually the primary species in the South Alaska Peninsula while sockeye and chum salmon are usually the primary species in the North Alaska Peninsula and pink salmon have been of economic importance in the Aleutian Islands. In some North Peninsula fisheries, chinook and coho salmon may be more economically important than chum salmon.

In 1985, an expanded chinook, sockeye, chum, and coho salmon commercial catch sampling operation was initiated in the Alaska Peninsula Management Area for establishing a data base for separating stocks, evaluating escapement goals, forecasting, and assessing inseason run timing. The current emphasis is on sockeye and chum salmon, with chinook and coho salmon also sampled.

OBJECTIVES

The sampling program objective is to determine sockeye and chum salmon age composition from the catch in the Alaska Peninsula fisheries with a level of precision for the major systems. Chinook and coho salmon are also sampled to obtain baseline age composition data.

Long Term: Improve management of salmon resources for the Alaska Peninsula and Aleutian Islands Management Areas through improvement of projecting runs, development of stock-recruitment relationships to assess escapement requirements, and accurate assessment of stock contribution levels for mixed stock fisheries.

Short Term: Develop brood tables for major sockeye and chum stocks, and determine age composition for each species of major stocks.

1. Determine salmon catch and effort by species and statistical area (Table 1).
2. Determine the age composition of chinook, sockeye, chum, and coho salmon for all major fisheries.
3. Establish an archive of scales suitable for potential analysis in interception and mixed stock fisheries.

SUPERVISION

Bob Murphy, Area Management Biologist (AMB), will supervise the catch sampling crews and operations at Port Moller, King Cove, and Sand Point. Rod Campbell will provide immediate direction for the person based in Sand Point.

PERSONNEL

Two person crews will be stationed to sample the commercial salmon catch for the Alaska Peninsula Management Area at King Cove and Port Moller, and a one-person crew stationed at Sand Point for the 1998 sampling season. The King Cove crew will be responsible for pressing all scales that are collected in King Cove, while the Sand Point person will send scale acetates, gum cards, and appropriate AWL forms to King Cove for pressing and the King Cove crew will then send the scales to Port Moller for aging. The Port Moller crew will be responsible for pressing all scales collected in any other location, unless otherwise instructed differently. Trained staff in Port Moller will read all scales collected in-season.

Dates of Sampling Events

The Port Moller sampling crew is expected to begin collection of age composition data about 1 June to approximately 5 September. The Port Moller crew will be responsible for catch sampling the commercial fisheries on the North Peninsula and possibly the South Peninsula commercial catch, if fish are delivered to Port Moller instead of King Cove.

Due to budget reductions, the King Cove sampling crew will not sample the South Unimak and Shumagin Islands June fisheries. Since the Board of Fisheries in January 1998, changed the South Peninsula Post June Salmon Management Plan, the King Cove catch sampling program will begin on July 6 and continue through 19 August. In 1998, a catch sampling person will be based in Sand Point from early July to August 20. The King Cove and Sand Point crews will be responsible for catch sampling the commercial fisheries on the South Peninsula, specifically sockeye catches from the Shumagin Islands and Northwest Stepovak Section for the person in Sand Point (and King Cove crew if needed) are a high priority, and the King Cove crew will sample sockeye, chum, and coho salmon from the remaining portion of the South Peninsula and Northwestern District.

METHODS

To ensure that samples from the designated areas are representative, mixed loads from multiple areas will not be sampled nor will there be any pre-selection of fish for length, sex, or condition. The tender schedules and locations will allow the sampling of pure loads obtained from the separate areas. To ensure that samples are not missed the crews will begin sampling the first day the

respective catches are delivered from the designated sampling areas for each week (Sunday to Saturday). Sampling usually will begin on Monday for catches from the previous day and end on Saturday. If the sampling crew believes that there is a high probability of collecting samples from the same area on more than one occasion during a week, the crew should try to collect the sample over the entire week. If the sampling crew is unsure, another sample can be collected later in the week, the crew should collect all the samples when they are first available. Additional sampling may occur at Canoe and Uria Bays. It is important to determine where the tenders have loaded fish. On the South Peninsula, the tenders deliver in both Sand Point and King Cove, with the majority delivering in King Cove.

Specific procedures for collecting and recording salmon age (scales) are in Appendix A and B. The accuracy of the data is the responsibility of the crew leaders. All questions concerning collection procedures should be brought to the attention of the supervisor at the first available opportunity.

Sample sizes are statistically derived to ensure the accuracy and precision of age composition work or stock composition methodologies. Catch sampling crews will be collecting 300 samples/period/area for chinook and coho salmon, 600 samples/period/area for sockeye, and 440 samples/period/area for chum salmon (Tables 2-5).

These sample sizes are the maximum. The maximum sample sizes may not always be available, especially for small local runs and early and late in the season. Do not sample an area unless at least 75 fish can be sampled for a given species during a period. The exceptions to this rule would be for a run where knowledge is limited, such as the sockeye run at Thin Point. Some areas may never have a pure load (i.e. Swanson Lagoon). At these areas, try to sample the fish when deliveries are 90% or more from one area (mark the percent of each fishing area on the top of each AWL form). Areas that will never be greater than 90% pure (i.e. Catherine's Cove), sample as time permits. Future analysis of the data will take the mixture into consideration.

Since all scale samples from catch and escapement sampling will be aged in Port Moller, periodic samples collected in King Cove and Sand Point will be sent pressed and with the appropriate paperwork to Port Moller. To ensure safe delivery notify the crew leader: 1) that the data is being mailed (use a secure moisture proof container); 2) what data is being sent; 3) when delivery is expected in Port Moller; and 4) who is transporting the data. The crew leader at King Cove and individual at Sand Point will maintain a log book of all outgoing catch samples.

Sockeye and chum sampling are the top priorities during all periods from the specified fishing areas. Chinook and coho salmon will be sampled as time allows. During the fall, coho salmon will be sampled when possible.

All crews will sample the first day of each period as the salmon become available. For each AWL sample, scales from the preferred area will be taken and as defined in Appendix A and B.

Weight sampling of salmon will occur in fisheries when requested by the Area Management Biologists. Samples will be randomly selected so that they are representative of the harvest.

Length and sex sampling will be conducted at Port Moller for sockeye salmon as specified in this report.

All crews should report all fin clipped and tagged fish to the appropriate supervisor. For chinook salmon with a clipped adipose fin, the head should be sealed in plastic, frozen, and sent to Andy McGregor, ADF&G, Juneau, Alaska, 99824. Catch location, catch date, gear type, species, tag number, type of tag, length, weight, and several scales from the preferred area should be included with the catch report.

The King Cove and Sand Point crews should anticipate supply shortages in-season and to notify staff in Port Moller before the supplies are exhausted. Each crew leader will keep a daily log book of activities. A report from each crew leader outlining problems encountered and solutions, as well as any suggestions for the project should be sent to Port Moller at the end of the season along with an equipment list and place of storage.

Appendix C contains general equipment, cabin maintenance, and crew policy.

Appendix D contains information on first aid and safety.

The responsibility of proper identification of catch area will be a necessary component of the dockside catch sampling crew.

DATA ANALYSIS AND REPORTING

A Regional Information Report will be completed for the 1998 season by 1 May 1999.

Presently, funding is not available for scale pattern analysis studies on the Alaska Peninsula.

LITERATURE CITED

- Murphy, R.L. 1992. Number of salmon systems and distribution of escapements in the Alaska Peninsula and Aleutian Islands Management Areas, 1986-91. Regional Information Report No. 4K92-15, Alaska Department of Fish and Game, Division of Commercial Fisheries, Region IV Report, Kodiak.

Table 1. Districts, sections, and statistical areas for the Alaska Peninsula and Aleutian Islands Management Areas, 1998.

Fishing Area Location	Statistical Areas
SOUTH PENINSULA	
Southeastern District	
Southeastern District Mainland	281-15; 281-25; 281-30; 281-40; 281-50; 281-60; 281-70; 281-80; 281-90
Shumagin Islands Section	282-10; 282-11; 282-20; 282-25; 282-30; 282-35; 282-40; 282-42; 282-45; 282-65; 282-70; 282-75; 282-80
South Central District	
Canoe Bay	283-24
Pavlof Bay	283-21; 283-23; 283-25; 282-26
Southwestern District	
Volcano Bay	284-36
Belkofski Bay	284-42
King Cove	284-45
Cold Bay	284-62; 284-65; 284-67
Deer Island	284-55
Thin Point	284-75
Morzhovoi Bay	284-80
Ikatan Peninsula to Cape Lazaref	284-90; 285-20; 285-30
Sanak Island	285-10
Unimak District	
Cape Lutke	285-40
ALEUTIAN ISLANDS AREA	
Unalaska District	302-22
NORTH PENINSULA	
Northwestern District	
Urilia Bay	311-32
Swanson Lagoon	311-52
Bechevin Bay	311-60
Izembek-Moffet Bay Section	312-10; 312-20; 312-40
Northern District	
Black Hills Section	313-10
Nelson Lagoon Section	313-30
Herendeen Bay	314-20
Harbor Point to Cape Seniavin	314-12; 315-11; 315-20
Cape Seniavin to Strogonof Point	316-10; 316-20; 316-22; 316-25
Harbor Point to Strogonof Point	314-12; 315's; 316's
Outer Port Heiden Section	317-10
Inner Port Heiden Section	317-20
Cinder River Section	318-20

Table 2. Sockeye salmon catch sampling schedule for the Alaska Peninsula and Aleutian Islands Management Areas, 1998.

Crew	District/Section	SAMPLING AREA		SAMPLE			
		Geographic Area	Statistical Area(s)	Freq.	Size	Data	Fishery
Port Moller							
	Northern District:						
	Nelson Lagoon Section	Nelson Lagoon	313-30	Weekly	600	Scales	Terminal
	Bear River (prior to June 25)	Harbor Point to Cape Seniavin	314-12,315-11,20	Weekly	600	ALSa	Mixed
	Bear River, Three Hills, and Ilnik Sections (post June 24)	Harbor Point to Stroganof Point	314-12,315-11,20 316-10,20,22,25	Weekly	1,200	ALSa	Mixed
	Ilnik Section (Lagoon)	Ilnik Lagoon	316-22	Weekly	600	Scales	Terminal
	Inner Port Heiden Section	Inner Port Heiden	317-20	Weekly	600	Scales	Terminal
King Cove/Sand Point							
	Northwestern District:						
		Urilia Bay	311-32	Weekly	600	Scales	Terminal
	Southeastern District:						
	Southeastern District Mainland	Beaver and Balboa Bays, Stepovak	281-90,80,30	Weekly	600	Scales	Mixed
	Shumagin Is. Section	Shumagin Islands	282's, see Table 1	Weekly	600	Scales	Mixed

-Continued-

Table 2. (page 2 of 2)

Crew	District/Section	SAMPLING AREA		SAMPLE			
		Geographic Area	Statistical Area(s)	Freq.	Size	Data	Fishery
King Cove/Sand Point (Cont.)							
8	South Central District:						
		Long Beach	283-26	Weekly	600	Scales	Mixed
		Cape Tolstoi	283-21	Weekly	600	Scales	Mixed
		Canoe Bay	283-24	Weekly	600	Scales	Mixed
		Pavlof Bay	283-21,23,25,26	Weekly	600	Scales	Mixed
	Southwestern District:						
	Thin Point Section	Thin Point Lagoon	284-75	Weekly	600	Scales	Terminal
		Morzhovoi Bay	284-80	Weekly	600	Scales	Terminal
	Unimak District:						
		Cape Lutke	285-40	Weekly	600	Scales	Mixed
		Ikatan Peninsula to C. Lazaref	284-90,285-20,30	Weekly	600	Scales	Mixed
	Unalaska District	Aleutian Islands Management Area	302	Weekly	600	Scales	Mixed

Table 3. Chum salmon catch sampling schedule for the Alaska Peninsula and Aleutian Islands Management Areas, 1998.

Crew	District/Section	SAMPLING AREA		SAMPLE			
		Geographic Area	Statistical Area(s)	Freq.	Size	Data	Fishery
Port Moller							
	Northern District:						
	Nelson Lagoon Section	Nelson Lagoon	313-30	Weekly	440	Scales	Terminal
	Moller/Herendeen Bay Section	Herendeen Bay	314-20	Weekly	440	Scales	Terminal
KingCove/Sand Point							
	Northwestern District:						
	Izembek-Moffet Bay Section	Izembek-Moffet Bay	312-10,20,40	Weekly	440	Scales	Terminal
		Swanson Lagoon	311-52	Weekly	440	Scales	Mixed
	Southeastern District:						
	Southeastern District Mainland	Beaver and Balboa Bays, Stepovak	281-90,80,70	Weekly	440	Scales	Mixed
	Shumagin Is. Section	Shumagin Islands	282-10,11,20,25, 30,35,40,42	Weekly	440	Scales	Mixed
	South Central District:						
		Coal Bay	283-17	Weekly	440	Scales	Mixed
		Canoe Bay	283-24	Weekly	440	Scales	Mixed
		Pavlof Bay	283-21,23,25,26	Weekly	440	Scales	Mixed

-Continued-

Table 3. (page 2 of 2)

Crew	District/Section	SAMPLING AREA		SAMPLE			
		Geographic Area	Statistical Area(s)	Freq.	Size	Data	Fishery
KingCove/Sand Point (Cont.)							
	Southwestern District:						
		Volcano Bay	284-36	Weekly	440	Scales	Mixed
		Belkofski Bay	284-42	Weekly	440	Scales	Terminal
		Cold Bay	284-62,65,67	Weekly	440	Scales	Mixed
		Morzhovoi Bay	284-80	Weekly	440	Scales	Both
	Unimak District:						
		Cape Lutke	285-40	Weekly	440	Scales	Mixed
		Ikatan Peninsula to C. Lazaref	284-90,285-20,30	Weekly	440	Scales	Mixed

Table 4. Coho salmon catch sampling schedule for the Alaska Peninsula Management Areas, 1998.

Crew	District/Section	SAMPLING AREA		Freq.	SAMPLE		
		Geographic Area	Statistical Area(s)		Size	Data	Fishery
Port Moller							
	Northern District:						
	Nelson Lagoon Section	Nelson Lagoon	313-30	Weekly	300	Scales	Terminal
King Cove/Sand Point							
	Northwestern District:						
	Izembek-Moffet Bay Section	Izembek-Moffet Bay	312-10,20,40	Weekly	300	Scales	Terminal
		Swanson Lagoon	311-52	Weekly	300	Scales	Terminal
	Southeastern District:						
	Southeastern District Mainland	Beaver and Balboa Bays, Stepovak	281-90,80,70	Weekly	300	Scales	Mixed
	Shumagin Is. Section	Shumagin Islands	282-10,11,20,25,30,35,40,42	Weekly	300	Scales	Mixed
	South Central District:						
		Coal Bay	283-17	Weekly	300	Scales	Mixed
		Canoe Bay	283-24	Weekly	300	Scales	Mixed
		Pavlof Bay	283-21,23,25,26	Weekly	300	Scales	Mixed
	Southwestern District:						
		Volcano Bay	284-36	Weekly	300	Scales	Mixed
		Belkofski Bay	284-42	Weekly	300	Scales	Terminal
		Cold Bay	284-62,65,67	Weekly	300	Scales	Mixed
		Morzhovoi Bay	284-80	Weekly	300	Scales	Both

-Continued-

Table 4. (page 2 of 2)

Crew	District/Section	SAMPLING AREA		SAMPLE			
		Geographic Area	Statistical Area(s)	Freq.	Size	Data	Fishery
King Cove/Sand Point (Cont.)							
	Unimak District:						
		Cape Lutke	285-40	Weekly	300	Scales	Mixed
		Ikatan Peninsula to C. Lazaref	284-90,285-20,30	Weekly	300	Scales	Mixed

Table 5. Chinook salmon catch sampling schedule for the Alaska Peninsula Management Areas, 1998.

Crew	District/Section	SAMPLING AREA		Freq.	SAMPLE		
		Geographic Area	Statistical Area(s)		Size	Data	Fishery
Port Moller							
	Northern District:						
	Nelson Lagoon Section	Nelson Lagoon	313-30	Weekly	300	Scales	Terminal
	Bear River Section (prior to July 25)	Harbor Point to Cape Seniavin	314-12,315-11,20	Weekly	300	Scales	Terminal
	Bear River, Three Hills, Ilnik Section (post June 24)	Harbor Point to Strogonof Point	314-12,315-11,20 316-10,20,22,25	Weekly	300	Scales	Terminal

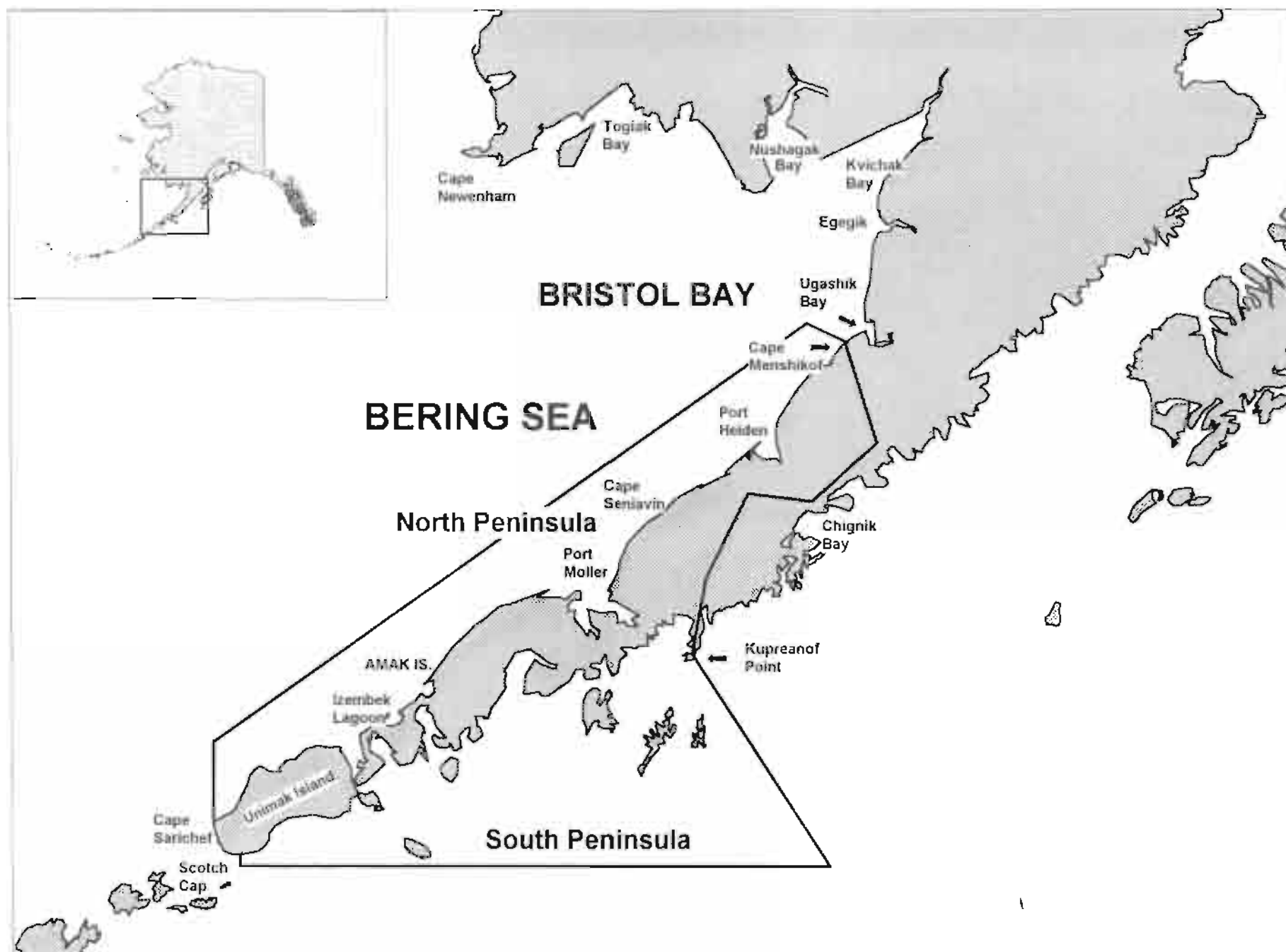


Figure 1. Map of the Alaska Peninsula Management Area, with the North and South Peninsula defined

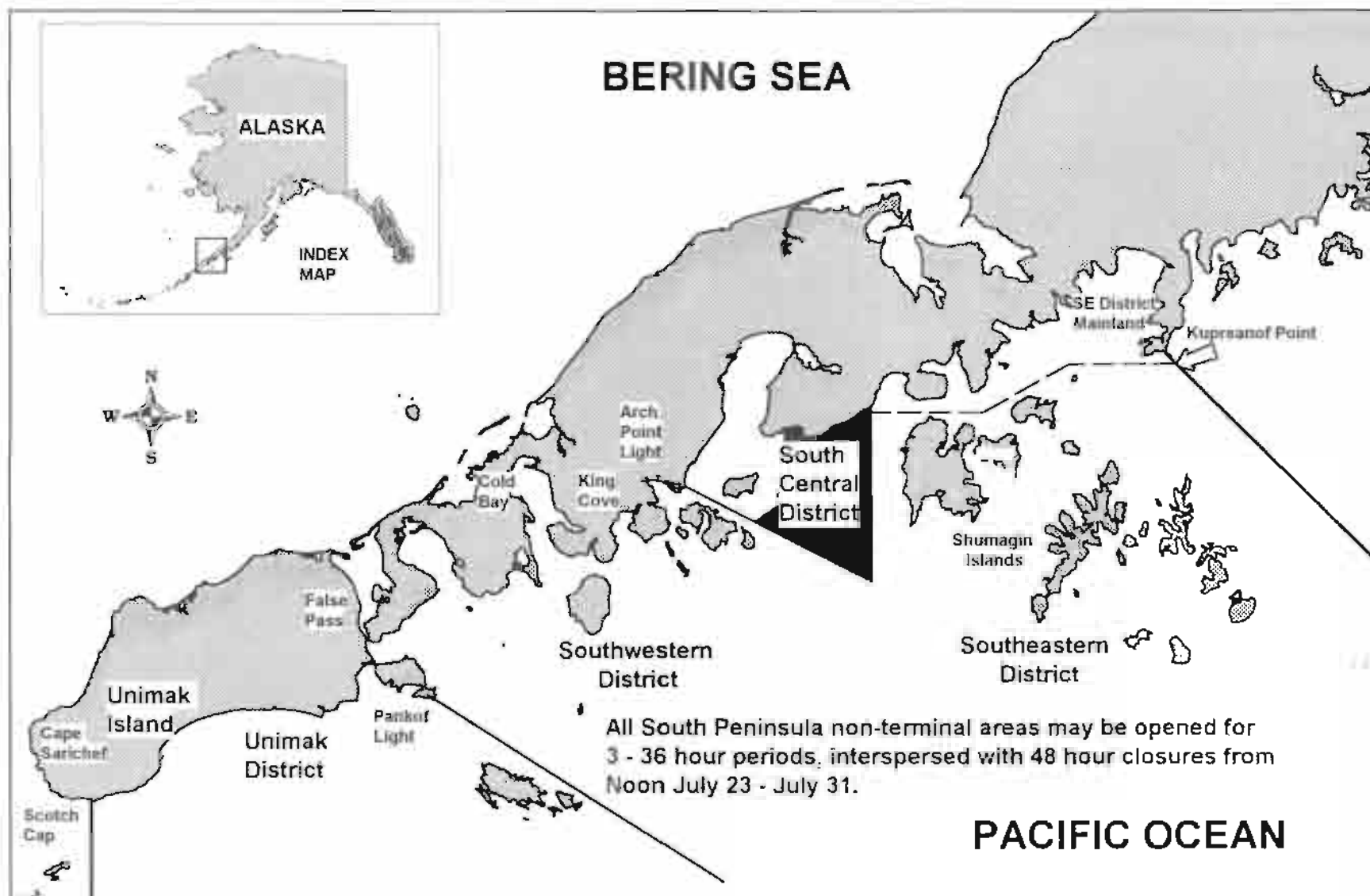


Figure 2. Map of the Alaska Peninsula Management Area from Kupreanof Point to Scotch Cap with the salmon fishing districts defined

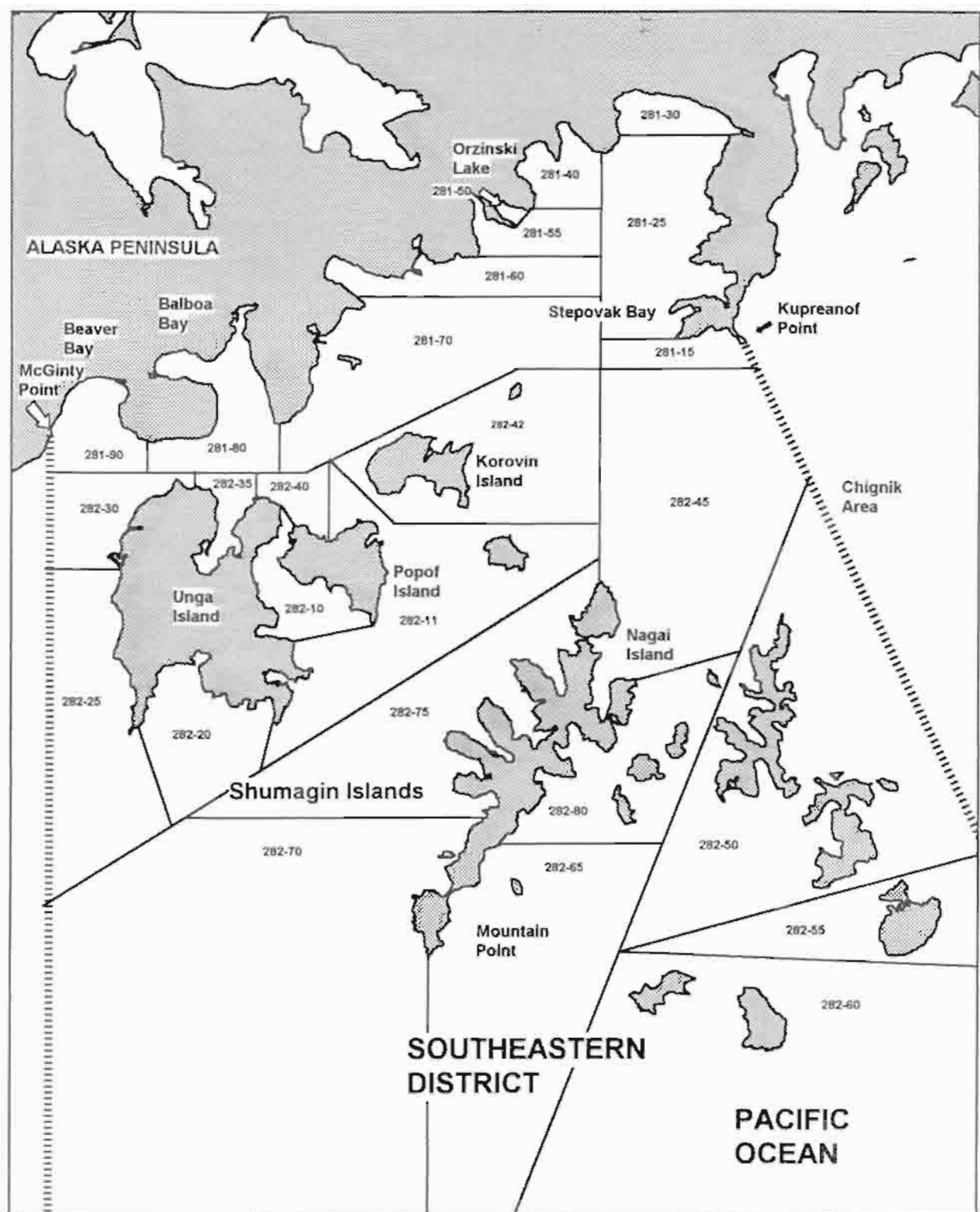


Figure 3. Map of the Alaska Peninsula Area from Kupreanof Point to McGinty Point (Southeastern District) with the statistical salmon fishing areas shown.

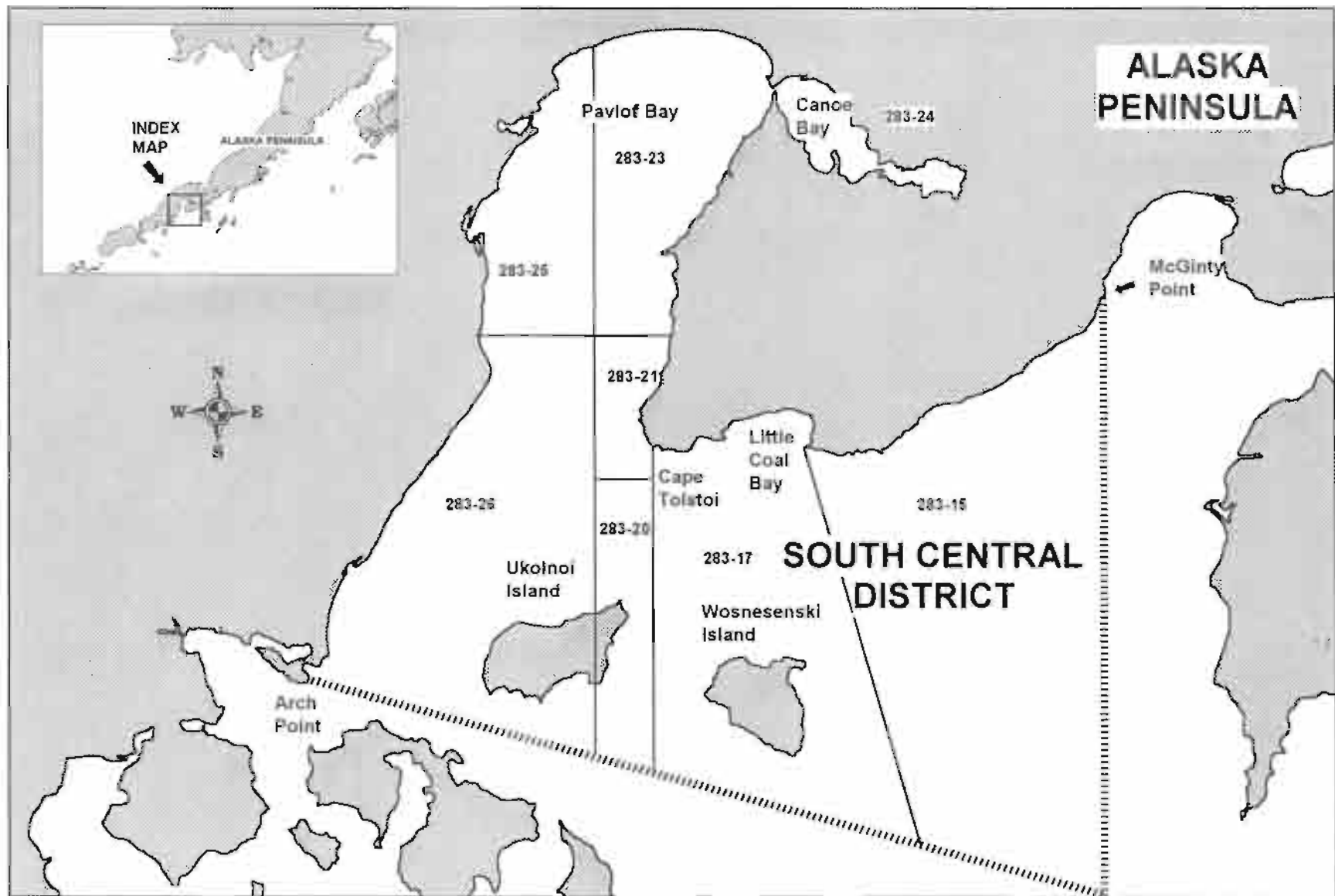


Figure 4 Map of the Alaska Peninsula Area from McGinty Point to Arch Point (South Central District) with the statistical salmon fishing areas shown.

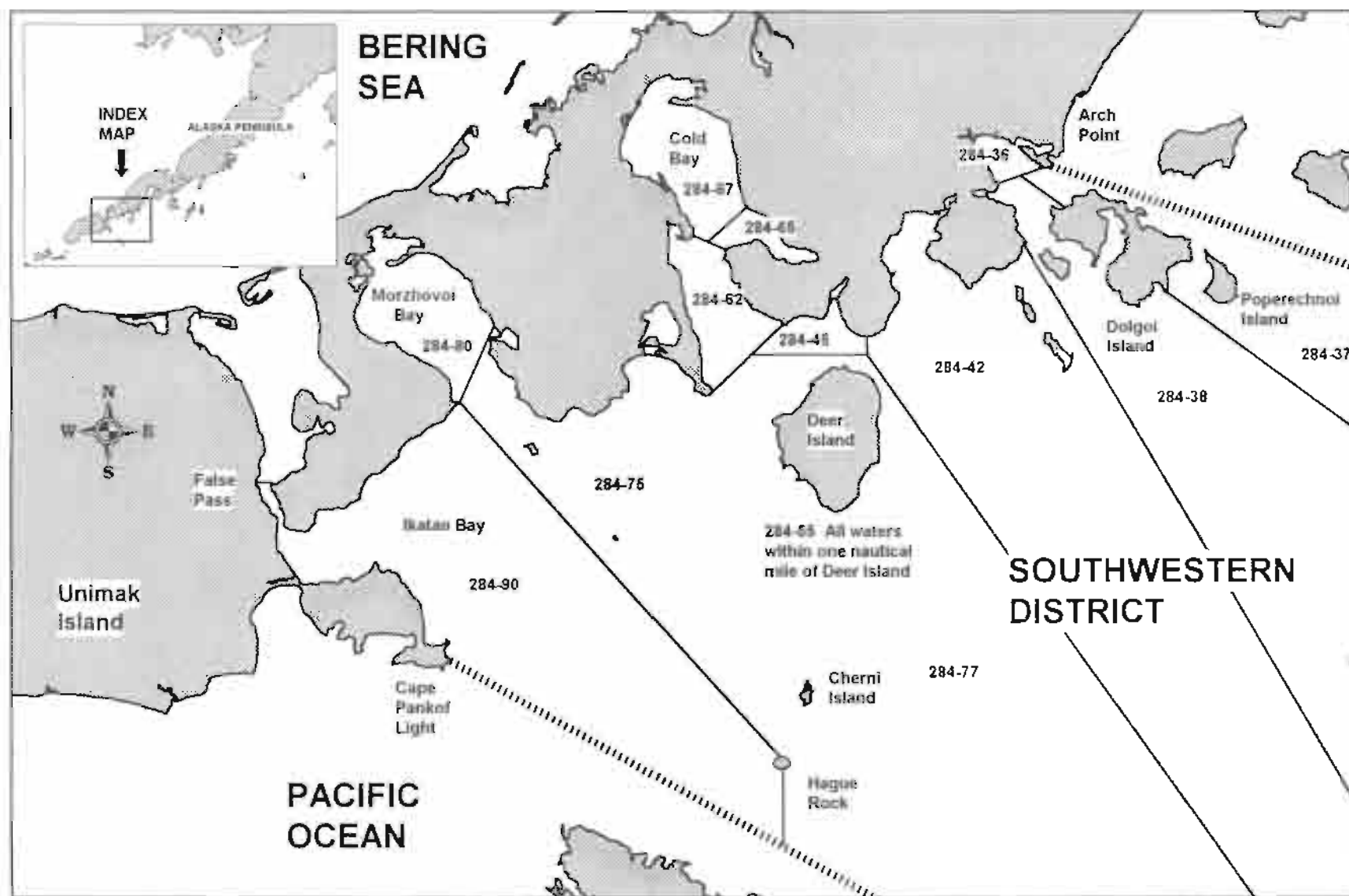


Figure 5. Map of the Alaska Peninsula Area from Arch Point to Unimak Island (Southwestern District) with the statistical salmon fishing areas shown.

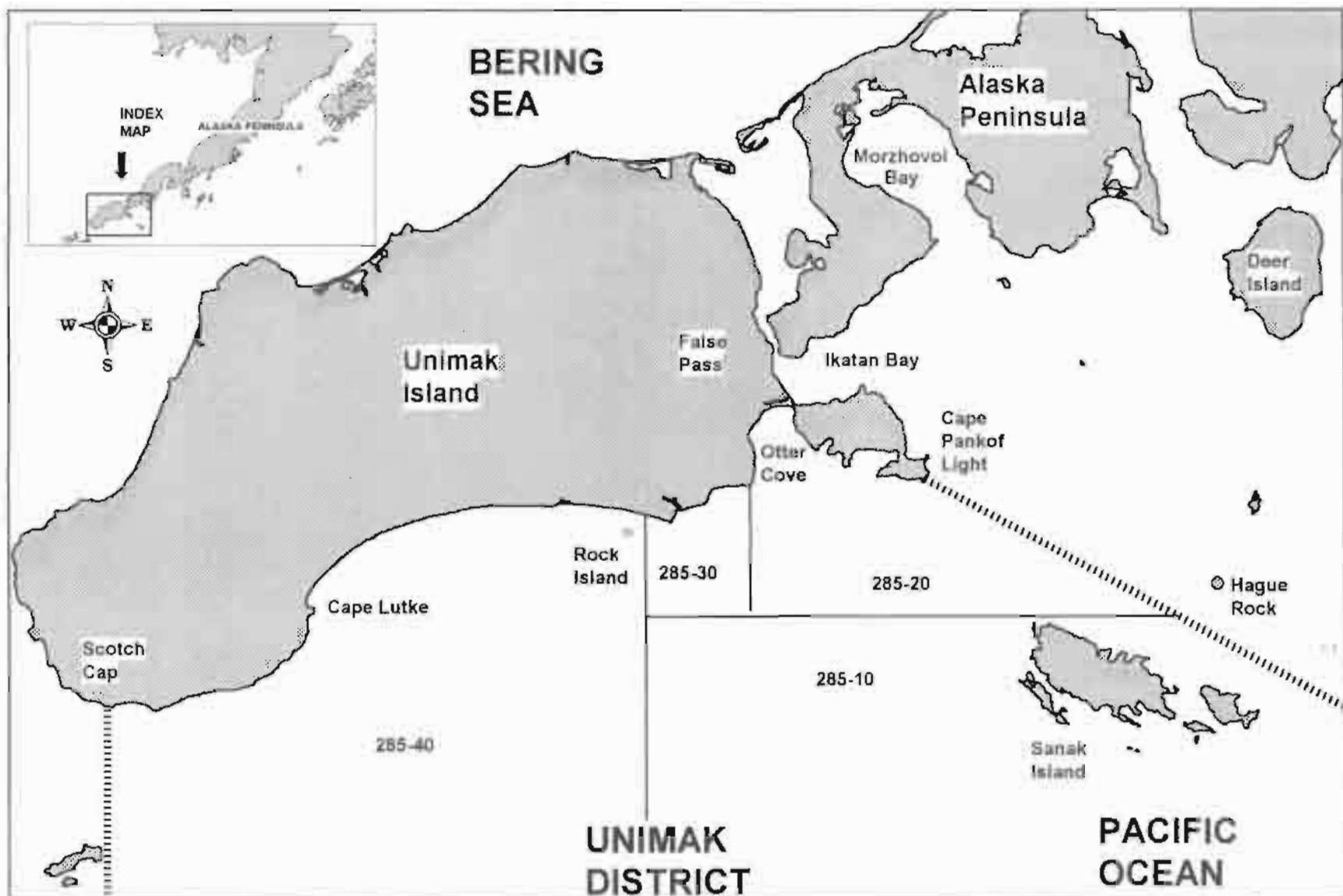


Figure 6. Map of the Alaska Peninsula Area from Hague Rock to Unimak Pass (Unimak District) with the statistical salmon fishing areas shown.

APPENDIX A

Alaska Peninsula Scale Sampling Technique

ALASKA PENINSULA SCALE SAMPLING TECHNIQUE

If you have not taken scales before or if you have any questions ask somebody who has prior experience with the sampling procedure. Scales must be readable to be useful, so follow proper techniques when sampling.

Gum Cards

A scale card is a gum-backed sheet numbered 1 through 40. Samples are placed on the cards with no attempt to separate the fish by their sex.

It is important to keep the gum card dry at all times. If weather does not allow you to do this it is best to suspend sampling until dryer conditions prevail. A wet gum card should not be used because the scales will fall-off before a readable impression can be made.

A new scale card is started for each day. Even if a card is not filled a new card is still to be started for each day. Also, a different card is to be used for each location, i.e. Nelson Lagoon vs. Herendeen Bay. It is important that scale cards and numbers match the corresponding AWL sheet.

Scales

1. Clean the scale by wetting it and rubbing it between your fingers. Make sure no dirt, slime and skin (no silver color) remain on the scale.
2. Mount the scale on the gum card with the ridged side up. The ridged side is the same side that is exposed on the salmon.
3. One scale will be taken from sockeye and chum salmon. Three scales will be taken from chinook salmon, and four scales from coho salmon.
4. Take the preferred scale if it is available, if not available take a scale but note on the AWL form that it is not preferred.
5. Scales should be neat, clean, and orderly.

Age-Weight-Length (AWL) Sampling Form

Age -Scale samples are taken for age.

Weight -Taken to nearest tenth of a kilogram on any adult fish not being returned live to the water (if required).

Length -Taken with the fish laying flat from the mid-eye point to the fork of the tail. Measure to the nearest millimeter.

Fill in all information on the AWL form and be sure length, sex, and weight data correspond to the appropriate scale.

APPENDIX B

Completion of Mark-Sense AWL Forms

Length, Sex, and Scale Sampling Procedure for Sampling: Using Mark-Sense Forms

INTRODUCTION

Salmon from terminal catches are sampled for length, sex, and scales annually. This data base is used as a tool to provide sound management of the salmon resources. To be useful, data must be recorded on the mark-sense forms neatly and accurately. The following procedures are to be followed when sampling for length, sex, and scales using mark-sense AWL forms.

COMPLETING THE FORMS:

Information needed to complete AWL forms, as well as examples of completed mark-sense AWL forms and accompanying gum cards for sampling commercial salmon catches from chinook, sockeye, and coho salmon are shown in Appendix B.1-B.5.

Complete each section of the left side of the mark-sense form using a soft No. 2 pencil and darken the corresponding blocks as shown in the figures. Make every effort to darken the entire block as partially filled blocks are often missed by the optical scanner which reads and records the data from the mark-sense AWL forms. If the blocks are not darkened properly, considerable time will be required later to edit these forms. Label only one form at a time to avoid "the carbon paper effect" and resulting stray marks.

Description:

For catch sampling: Area/Samplers (names)

Gum Card:

The AWL forms and corresponding gum card(s) are numbered sequentially by date throughout the season starting with 001 for each fishery. A separate numbering sequence will be used for each species, gear type, district, and geographic location. Consult your crew leader for the current card number. Sockeye and chum samples will have only 1 card per AWL form as shown in Appendix B.4. Coho and chinook samples will contain up to four cards per AWL form as shown in Appendix B.2 and B.5.

Species:

Refer to the reverse side of the AWL form for the correct digit.

Day, Month, Year:

Use appropriate digits for the date the fish are caught, not the date that they are processed.

District:

List only one district. Consult project leader for appropriate district and subdistrict numbers.

Subdistrict:

List a single subdistrict if it is known and all the fish sampled were from that single subdistrict. Leave it blank if more than one subdistrict is involved or if the subdistrict is unknown.

Stream:

Leave blank for catch sampling.

Location:

For catch sampling list the appropriate port code (Appendix B.1).

Period:

Refers to the calendar dates when the sample was harvested (not the sample date) as found in Appendix B.3.

Project:

Refer to the reverse side of the AWL form for the correct code.

Gear:

Refer to the reverse side of the AWL form.

Mesh:

Leave blank unless specifically instructed by supervisor to do otherwise.

Type of length measurement:

Use mid-eye to fork-of-tail (unless specifically instructed to do otherwise).

of cards:

Mark 1 when sampling sockeye and chum salmon (Appendix B). Mark 1A, 1B, 1C, or 1D when sampling chinook and coho salmon and write the card numbers perpendicular to the left of the fish # column as shown in Appendix B.

It is extremely important to keep the mark-sense forms flat, dry, and clean. Fish slime and water curling will cause data to be misinterpreted by the optical scanning reader machine. If unnecessary pencil marks, dark spots, etc. are visible, they need to be erased or else the machine will misinterpret the mark. It is necessary to completely fill in all information and darken the boxes (if needed) after each day.

Additional data columns are available on the reverse of the AWL for individual project use. If you take weights, you need to transfer the dark boxes on the front left margin of the form to the left margin on the back. This code needs to be exactly as it appears on the front.

GUM CARD(S):

Fill out the gum cards as shown in Appendices B.2, B.4, and B.5.

Species:

Write completely name of species (i.e., chinook, sockeye, etc.).

Location:

For catch sampling, write down area in which fish were caught followed by the word catch (ex. Herendeen Bay Catch).

Statistical code and Sampling date:

Transfer the appropriate digits from the AWL form.

Gear:

Write completely name of gear.

Collector(s):

Record the last name or initials of the person(s) sampling.

Remarks:

Record any pertinent information such as; number of scales per fish sampled, vessel/tender name, etc. Transfer this same information to the top margin of the AWL.

SAMPLING:

A. GENERAL

1. (WHEN REQUESTED BY AN AMB): Sex the fish and darken M or F in the sex columns. If any difficulty was encountered in this procedure, write "I had trouble sexing these fish" on the top margin of the AWL and ask your supervisor for help as soon as possible before sexing additional fish.
2. (WHEN REQUESTED BY AN AMB): Measure all species length in millimeters from the middle of the eye to the fork of the tail, refer to Appendix B. Record length by blackening the appropriate column blocks on the AWL form. Column 3 on the AWL form is used for fish over 999 millimeters long. Measure all species of salmon to the nearest mm. Check the calipers daily before use to ensure the accuracy of the measurements.
3. Pluck the "preferred scale" from the fish using forceps. Remove all slime, grit, and skin from the scale by moistening and rubbing between fingers. The "preferred scale" is located on the left side of the fish, two rows above the lateral line on the diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin. Refer to Appendix B. If the "preferred scale" is missing, select a scale within the preferred area on either the left or right side of the fish. If no scales are present in the "preferred area" on both sides of the fish, sample a scale as close to the preferred area as possible and darken the 8 under "age error code" on the AWL form.

4. Clean, moisten and mount scale on gum card directly over number 1 as shown in Appendix B. The side of the scale facing up on the gum card is the same as the side facing up when it was adhered to the fish. The exposed facing side is referred to as the "sculptured" side of the scale. The ridges on this sculpture side can be felt with a fingernail or forceps. Mount scale with anterior end oriented toward top of gum card.
5. When sampling sockeye and chum salmon repeat steps 1 through 4 for up to 40 fish on each AWL form.
6. When taking three scales per fish as with chinook or four scales per fish as with coho salmon sample the "preferred scale" and scale #2 and scale #3 as shown in Appendix B. Scale #2 is one inch to the left of the "preferred scale," scale #3 is located one inch to the right, and scale #4 is located between next to any of the other three preferred scales. All are two rows above the lateral line. Mount the three scales from fish #1 over 1, 11, and 21, or 31 if four scales are taken (coho), on the gum card as shown in Appendix B.5. Continuing, mount the 3 scales from fish #2 over 2, 12, and 22, etc.
7. Use plastic scale card holders to hold individual scale cards during sampling and cover the completed gum card with wax paper for storage.
8. Miscellaneous:
 - a. During wet conditions it is difficult to mount scales properly to get a good scale impression. Glue often obscures scale features and scales frequently adhere poorly to the card. Try to keep all the paperwork dry during this time. If the gumcard does get wet, the scales should be remounted.
 - b. For adipose clipped fish record the head tag number on the corresponding row in the first five columns on the reverse side of the AWL.
 - c. Look down the form from two angles after the data has been recorded to pick up any glaring mistakes. A common error occurs, for instance, in placing both the 4 and 7 of a 475 mm fish in the 100's column with nothing in the 10's column.
 - d. Keep all fish slime off forms and erase any stray marks on the forms before turning them in to your supervisor.
 - e. Write in all comments explicitly and completely under remarks, transfer remarks to top margin of AWL.
 - f. Responsibility for accuracy lies first with the primary data collector(s). The supervisor will return sloppy or incomplete data to individual collectors. After editing a form, place your initials next to card #, but not in left margin. Editing these forms will save valuable time during the winter, and is an extremely important part of your job duties.

9. As soon as possible after completion send the samples and mark-sense forms to Port Moller. During scheduled radio calls before and following the sending of data, the crew leader will notify staff in Port Moller: (1) that the data is being mailed (use a moisture-proof container); (2) what data is being sent; (3) when delivery is expected in Port Moller; and (4) who is transporting the data. It is important that these steps are followed to ensure delivery.

SCALE SAMPLING CHECKLIST

Clipboard	Pencils (No. 2)	Gloves
Gum Cards	Forceps	Measuring board or calipers
AWL's	Wax paper inserts	Sampling Manual
Plastic scale card holders		

SOME REMINDERS

1. For greater efficiency in scale reading and digitizing, mount scales with anterior end toward top of scale card.
2. AWL's should be carefully edited before submitting. **This is extremely important, and cannot be emphasized enough.** Re-check header information on AWL's; make sure all available information is filled in. Take extra care to use the catch date and not sample date. Page numbers should not be repeated; a frequent error is to begin a week's sample with the last page number used the week before. This is particularly important if the data is regularly sent to town; it is easy to forget which numbers were used. Crew leaders should take time to ensure that the boxes are being blackened correctly, if the boxes are not darkened properly or sloppily marked the optical scanner records the information incorrectly or misses it entirely. Keep marks within each rectangle and completely fill them. Do not go outside the rectangle. After the AWL's are edited, place editor's initial next to page number, but not in left margin.
3. Check to make sure error codes (listed on back) are being used correctly, i.e. error code 7 is wrong species, error code 8 is a non-preferred scale. Error code 6 is for the use of the scale reader, it refers to the reabsorption of the scale.
4. Transfer important comments from scale cards to AWL's. After pressing scales, the cards are seldom referred to again, and important remarks can be lost. Write comments in the top margin (not on the left side) or on the reverse of the AWL. If no room is available on the AWL to completely explain the remarks, use a separate piece of paper.

5. Never put data from different dates on one AWL or one scale card. Even if only one scale is collected that day, begin a new card and AWL for the next day.
6. If weights are taken, they may be noted in the right margin of the AWL during sampling, but be sure to transfer the weights to the appropriate columns on the reverse of the AWL before submitting, **and darken in the litho code from the left front margin to the left back margin of the AWL form.**
7. The data processing program uses the litho code on the AWL. (It is located in the lower left margin of the AWL.) It helps if the AWL's are used in the order of this code. It should not be hard to keep them in order if they are arranged that way before page numbering. Those who sample different areas throughout the season can arrange the litho codes in order before each sample is taken.
8. If AWL's get wrinkled or blotched they should be copied over before sending to Port Moller. The optical scanning machine is extremely sensitive to wrinkles and blotches and will misread or reject the sheets.

Appendix B.1. Assigned port and weir location codes.

Port Codes

150 - King Cove
151 - Port Moller
152 - Dutch Harbor
153 - Akutan
154 - Sand Point
155 - Bear River, ADF&G Weir
156 - Nelson River, ADF&G Weir
157 - Canoe Bay
158 - Ilnik Lagoon, ADF&G Weir
159 - Orzinski River, ADF&G Weir
160 - Sandy River, ADF&G Weir
161 - Thin Point Lagoon, ADF&G Weir
162 - Middle Lagoon, ADF&G Weir

Species: Chinook Card No: 001
 Locality: Harbor Pt. Cape San Juan
 Dist. Code: 315 - 151
 Sampling Date: Mo. 6 Day 10 Year 97
 Gear: _____
 Collector(s): TM, RM, SN
 Remarks: _____

DESCRIPTION: Chinook Harbor San Juan

RTH READER KM
 WBM
 P.11458 SAMPLE DATE 6/10/97

ADF&G ADULT SALMON AGE-LENGTH
 FORM VERSION 2.1

CARD: 001

SPECIES: 1

DAY: 10

MONTH: 6

YEAR: 97

DISTRICT: 35

SUBDISTRICT: _____

STREAM: _____

LOCATION: 151

PERIOD: _____

PROJECT: 1

GEAR: 3

MESH: _____

TYPE OF LENGTH MEASUREMENT: 2

NUMBER SCALES/FISH: 3

OF CARDS: 1

#	SEX	100's	LENGTH	1's	AGE GROUP	AGE ERROR CODE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						

10 9 8 7 6 5 4 3 2 1
 20 19 18 17 16 15 14 13 12 11
 30 29 28 27 26 25 24 23 22 21
 40 39 38 37 36 35 34 33 32 31

Appendix B.3. Periods and corresponding calendar dates, 1998.

Period	Calendar Dates	Period	Calendar Dates
1	01-Jan to 03-Jan	28	05-Jul to 11-Jul
2	04-Jan to 10-Jan	29	12-Jul to 18-Jul
3	11-Jan to 17-Jan	30	19-Jul to 25-Jul
4	18-Jan to 24-Jan	31	26-Jul to 01-Aug
5	25-Jan to 31-Jan	32	02-Aug to 08-Aug
6	01-Feb to 07-Feb	33	09-Aug to 15-Aug
7	08-Feb to 14-Feb	34	16-Aug to 22-Aug
8	15-Feb to 21-Feb	35	23-Aug to 29-Sep
9	22-Feb to 28-Feb	36	30-Aug to 05-Sep
10	01-Mar to 07-Mar	37	06-Sep to 12-Sep
11	08-Mar to 14-Mar	38	13-Sep to 19-Sep
12	15-Mar to 21-Mar	39	20-Sep to 26-Sep
13	22-Mar to 28-Mar	40	27-Sep to 03-Oct
14	29-Mar to 04-Apr	41	04-Oct to 10-Oct
15	05-Apr to 11-Apr	42	11-Oct to 17-Oct
16	12-Apr to 18-Apr	43	18-Oct to 24-Oct
17	19-Apr to 25-Apr	44	25-Oct to 31-Oct
18	26-Apr to 02-May	45	01-Nov to 07-Nov
19	03-May to 09-May	46	08-Nov to 14-Nov
20	10-May to 16-May	47	15-Nov to 21-Nov
21	17-May to 23-May	48	22-Nov to 28-Nov
22	24-May to 30-May	49	29-Nov to 05-Dec
23	31-May to 06-Jun	50	06-Dec to 12-Dec
24	07-Jun to 13-Jun	51	13-Dec to 19-Dec
25	14-Jun to 20-Jun	52	20-Dec to 26-Dec
26	21-Jun to 27-Jun	53	27-Dec to 31-Dec
27	28-Jun to 04-Jul		

Species: Sockeye Card No: 015
 Locality: Nelson Lagoon
 Dist. Code: 313-30-151
 Sampling Date: Mo. 6 Day 19 Year 97
 Gear: TM, NH, SN
 Collector(s): TM, NH, SN
 Remarks:

DESCRIPTION: Sockeye Nelson Lgn

RMA READER RM
 P.S. SAMPLE DATE 6/20/97

ADF&G ADULT SALMON AGE-LENGTH
 FORM VERSION 2.1

CARD:	SEX	100's	LENGTH	1's	AGE GROUP	AGE ERROR CODE
015						
SPECIES: 2						
DAY: 19						
MONTH: 6						
YEAR: 97						
DISTRICT: 313						
SUBDISTRICT: 30						
STREAM:						
LOCATION: 151						
PERIOD:						
PROJECT: 1						
GEAR:						
MESH:						
TYPE OF LENGTH MEASUREMENT: 2						
NUMBER SCALES/FISH: 1						
# OF CARDS: 1						

1	11	21	31
2	12	22	32
3	13	23	33
4	14	24	34
5	15	25	35
6	16	26	36
7	17	27	37
8	18	28	38
9	19	29	39
10	20	30	40

Species: Coho Card No: 001
 Locality: Harbor PT - Cape Sardin
 Stat. Code: 315 - 151
 Sampling Date: Mo 8 Day 18 Year 97
 Gear: _____
 Collector(s): T.M. MAA
 Remarks: _____

DESCRIPTION: Coho Harbor 151

R-VA

Research: RH

D. 7/11/19

Date 8/19

ADF&G ADULT SALMON AGE-LENGTH
FORM VERSION 2.1

CARD:	SEX	100's	LENGTH	1's	AGE GROUP	AGE ERROR CODE
001						
SPECIES: <u>3</u>						
DAY: <u>18</u>						
MONTH: <u>8</u>						
YEAR: <u>97</u>						
DISTRICT: <u>315</u>						
SUBDISTRICT:						
STREAM:						
LOCATION: <u>151</u>						
PERIOD:						
PROJECT: <u>1</u>						
GEAR: <u>3</u>						
MESH:						
TYPE OF LENGTH MEASUREMENT: <u>2</u>						
NUMBER SCALES/FISH: <u>4</u>						
# OF CARDS: <u>1</u>						

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

Appendix B.5. Coho salmon AWL form and gumcard with four scales per fish.

APPENDIX C

Camp Policy

CAMP POLICY

1. No alcoholic beverages are to be stored in areas open to public view including cook tents. If alcohol is consumed at a camp an employee must be off-duty and under no circumstances shall he or she engage in the operation of any State equipment, including boats and motors nor shall he or she return to duty status under the influence of alcohol.
2. The crew leader of each sampling station shall establish a policy on living standards and personnel behavior in accordance with normal guidelines.
3. All sampling stations will operate as directed. No crew leader shall be off location for more than 24 hours unless specifically authorized by immediate supervisor. Time-off for individual crew members shall be scheduled by the crew leader and shall have the option as to whether sampling duties allow time-off from the location.
4. All employees will be required to act in a professional manner at all times and shall be especially courteous to the public.
5. It will be the responsibility of the crew leader to report any equipment abuse to the AMB and to ensure that abuse does not occur.

Additionally, the crew leader must also report within 24 hours any loss of equipment which occurs.

PERSONAL GEAR AND PETS

Generally 100 lbs. is a maximum for personal gear. If you anticipate bringing more than that amount, check with your supervisor first. Pets shall not be brought to a catch sampling site unless approved beforehand.

Rabies is common on the Alaska Peninsula, be careful of all mammals including ground squirrels, fox, wolf, otters, and your pet. If bitten save the head of the animal if possible, wrap the head in several layers of plastic, put in a good box and freeze if possible. Notify your supervisor of the accident and your supervisor will send you into Anchorage if tests for rabies prove positive. Burn and bury remaining parts of the carcass away from water sources and cabins, take precautions such as wearing plastic gloves to dispose of the carcass. Do not send suspected rabies animals out of your area unless you are bitten, burn and bury the carcass as instructed.

FISH AND WILDLIFE VIOLATIONS

CONTACT A FISH & WILDLIFE PROTECTION OFFICER IMMEDIATELY IF POSSIBLE! This is not intended as an inclusive procedure for handling violations, it is not your job. Use this as a guideline for obtaining the necessary information and/or evidence to show and prove that a violation has been committed. It is important to be familiar with the commercial fishing, subsistence fishing, sport fishing, and hunting regulations in your area.

Violation procedures are printed on the back cover of the commercial fishing regulation book. Request the regulation book if your camp does not have one.

The use of the 5 W's can greatly aid the Fish & Wildlife Protection officers in obtaining sufficient evidence for a case.

1. What is the violation?
2. When did the violation occur (date, time, tide condition, etc.)
3. Where did the violation occur?
4. Who is in violation and who are witnesses?
5. Why was the violation committed?

It is important that all witnesses to a violation be interviewed and all statements pertaining to a violation be recorded along with their names and addresses. If you have a camera available, pictures are extremely valuable in prosecuting offenders. Collect as much information as possible and contact your supervisor or a State Trooper from the Fish and Wildlife Protection Division immediately. If you do not feel comfortable, or your personal safety may be in danger, do not pursue the violation. Contact your supervisor and they will handle the violation. Be aware that you do not have the power to arrest somebody and never attempt this.

FIREARMS

A State weapon may be available at each location and staff should be familiar with firearms safety and proper use. Personal firearms are not recommended in these areas, unless the immediate supervisor approves. Loaded guns are prohibited inside any facility. Loaded, meaning a round in the chamber of the gun. Anyone handling a firearm should always treat it as if it were loaded. Guns should be kept clean and oiled and be completely unloaded while being cleaned. Any horseplay with or misuse of firearms while working for the Department of Fish and Game will not be tolerated and will be grounds for immediate dismissal. Completely unload a firearm of all rounds before entering a vessel or airplane. Keep an empty chamber under the firing pin of each pistol.

BEARS

Do not antagonize bears - each one is potentially dangerous. Do not encourage bears to come around camp by leaving food or unburned garbage around. Do not shoot at a bear unless, in your best judgment, he is endangering someone's life or damaging personal or state property. Use your best judgment on whether to shoot a bear if property is at stake. When, and if, trying to frighten a bear away by shooting - do not fire toward it. By chance, you may wound it by pulling the shot, ricochets, etc. If you are having problems with a particular bear around camp, call the office and notify them of the situation. The Game Division personnel will take care of the problem, if it is feasible.

TRANSPORTATION

Do not endanger life or property by going out in a boat on dangerously rough water. If you are unfamiliar with Marine Safety, ask for information or advice. All personnel must wear a life jacket when out on open water. Use your head - if you think it is dangerous, don't go out on the water.

Extra shear pins or propellers and a tool kit which includes pliers, spark plugs, and a spark plug wrench should be in the boat at all times. In case travel at night becomes necessary, carry a flashlight.

Some camps may be furnished with 3-wheel or 4-wheel all terrain vehicles (ATV's). The following safety precautions shall be observed at all times regarding Department ATV's. Only employees of the State may use the vehicles. Non-Fish and Game employees are not allowed on these vehicles at any time. Only one employee may ride on the vehicle at one time. Safety helmets are provided for all riders.

Review the Marine Safety and Light Aircraft Safety Manuals located at all camps before boating or flying. Do not get in a boat or plane if you feel uncomfortable with the situation. Consult the crew leader or pilot beforehand.

APPENDIX D

First Aid and Safety

FIRE AND FIRST AID

Check the facilities fire extinguisher and emergency exits. Know where it is and how to use it! Inventory your camp first aid kit, replace items as needed and become familiar with basic first aid treatment. Review the first aid booklet.

APPEARANCE

Keep the facilities, surrounding area, and yourself clean and neat. Appearance is important even in remote camps. Impressions of visitors (public, visitors, officials, etc.) are often based on personal appearances. Do your best to look respectable and keep the grounds clean.

COMPATIBILITY OF FIELD PERSONNEL

If you find yourself unable to get along with other members at your camp, notify the appropriate supervisor and an attempt will be made to solve the problem. Usually, the person with the most experience in camp will be the crew leader. If it is not clear who has been designated crew leader in your camp ask your supervisor.

MEMORANDUM

STATE OF ALASKA

To: Catch Sampling Crews

1998 FIELD CAMPS

From: Bob Murphy
Area Management Biologist
Division of Commercial Fisheries
Department of Fish & Game - Kodiak, Port Moller

SUBJECT: Health and Welfare of Crew Members

All employees must read the Safety Standard Operational Plans and other safety materials included and must be fully aware of all health and safety practices (e.g. basic first aid, location of fire extinguishers, etc.). More often than not, these obvious practices are ignored. With camps as they are, neglect of health practices can have serious ramifications if an employee were to become ill.

King Cove, Sand Point, and Port Moller have medical clinics. Insurance forms will be available at all locations. Inform your supervisor immediately of any illness or injury that will require medical assistance or lost work time.

A State rifle or shotgun may be available at each location. Loaded guns are prohibited inside any facility. Loaded, means a round in the chamber of the gun. Anyone handling a firearm should always treat it as if it were loaded. Guns should be kept clean and oiled and be completely unloaded while being cleaned. Any horseplay with or misuse of firearms while working for the Department of Fish and Game will not be tolerated and will be grounds for immediate dismissal. Completely unload a firearm of all rounds before entering a vessel or airplane. Keep an empty chamber under the firing pin of each pistol to prevent accidental discharge by accidentally dropping the weapon.

Do not antagonize bears - each one is a potential danger. Do not encourage bears to come around camp by leaving food or unburned garbage around. Do not shoot at a bear unless, in your best judgment, he is endangering someone's life or damaging personal or state property. Use your best judgment on whether to shoot a bear if property is at stake. When, and if, trying to frighten a bear away by shooting near it. By chance, you may wound the animal accidentally. If you are having problems with a particular bear around camp, call the AMB and notify them of the situation. The Game Division personnel will take care of the problem, if it is feasible.

Port Moller has 4-wheel all terrain vehicles (ATV's). The following safety precautions shall be observed at all times regarding Department ATV's. Only employees of the State may use the vehicles. Non-Fish and Game employees are not allowed on these vehicles at any time. The safety helmet provided must be worn during operation of an ATV. An ATV may provide transport of State materials, supplies, and equipment between camp sites and supply planes or vessels. In addition, they may be used for transportation to and from assigned duties in the field such as monitoring a fishery or collecting harvest information, etc. Recreational activities within reason are permitted but safety of the rider and vehicle must be adhered.

Check your camp's fire extinguisher. Know where it is and how to use it! Inventory your camp first aid kit, replace items as needed and become familiar with basic first aid treatment. Review the first aid booklet.

Keep the cabin, surrounding area, and yourself clean and neat. Appearance is important. You will not always be notified of the intended arrival of visitors, officials, etc. Impressions of visitors are often based on appearance.

Rabies is common on the Alaska Peninsula, be careful of all mammals including ground squirrels, fox, wolf, otters, and your pet. If bitten save the head of the animal if possible, wrap the head in several layers of plastic, put in a good box and freeze if possible. Notify your supervisor of the accident immediately. Burn and bury remaining parts of the carcass away from water sources and cabins, take precautions such as wearing plastic gloves to dispose of the carcass. Do not send suspected rabies animals out of your area unless you are bitten.